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VII. *Extract of a Letter from M. Geoffroy, Chemist, Member of the Royal Academy of Sciences at Paris, and F. R. S. to Sir Hans Sloane, Bart. President of the Royal Society ; concerning Mr. Seignette's SAL POLYCHRESTUS RUPELLENSIS, and some other Chemical Salts. By T. S. M. D.*

Paris, May 4, 1732.

S I R,

WE have nothing new in *Chemistry* here, but the Discovery we have made of the Make of Mess^{rs}. *Seignette's Sal polychrestus Rupellensis*. It is a *Tartarum solubile*, composed of Cream, or Crystals of *Tartar* ; and the fix'd Salt of the *Kali* of *Alicante* well depurated. This Salt is very singular ; for tho' it be a fix'd *Alkaline* Salt, it has the peculiar Property of crystalizing ; nor does it easily dissolve in the open Air, as other fix'd Salts do ; but on the contrary, it calcines therein, like *Vitriols* or *Glauber's Salt*. Another peculiar Property, which I have observ'd to belong to it, is, that if it be satiated with a *vitriolick Acid*, and the Liquor be evaporated, there results a Salt that has the Form of *Glauber's Salt*, and all the Properties requisite to make Mess^{rs}. *Seignette's Salt*. In order to which,

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Take of the Salt of *Kali* well purified, 1℔. dissolve it in Water, add thereto of *Cryſtals of Tartar* about 1℔ 3; boil the whole in order to diſſolve the *Cryſtals of Tartar*. But the exact Proportion of *Cryſtals of Tartar* can be no more determined in this Operation, than in making the *Tartarum ſolubile*; either becauſe the Salt of *Kali* has retain'd more or leſs Humidity in its Cryſtallization, or becauſe the *Tartar* has more or leſs Impurities in it. But if there be too much *Tartar* in the alkaline Liquor, after the Fermentation is over, filtrate the Liquor, and as it cools, the ſuperfluous *Tartar* will fall to the Bottom. After the Separation of the *Tartar* from the Liquor, evaporate the *Lixivium* by a gentle Heat, ſet it in a cool Place to cryſtallize, and you will have very fine *Cryſtals*. If the Liquor be evaporated a little too much, there will be no *Cryſtals* of Salt formed, but the Liquor will be converted into a hard transparent Maſs, not unlike Glue. But if you diſſolve this Maſs again, you may make it cryſtallize, as upon diſſolving *Seignette's* Salt.

This Salt purges very well, from one to two Ounces diſſolv'd in a Quart of Water.

Such is the Diſcovery of this Salt, which has hitherto paſſed for an *Arcanum*.

We have likewise his cryſtallized alkaline Salt, which is the Salt of *Kali*, that diſſolves not in the Air. I am actually at work in perfecting this Salt, in examining that of *Kali*, and comparing it with *Borax*. From this laſt I extract *Glauber's* Salt,

Salt, by mixing it with Oil of *Vitriol*. The Mixture of *Borax* ℥iv with Oil of *Vitriol*, ℥j 3j upon Sublimation gives me the *Sal sedativum* described by M. *Homburg*; and the Residue exposed to a strong Fire affords *Glauber's Salt*. I have found out a Method to shorten this Operation; for instead of subliming this Salt, I get it by Crystallization in light foliated *Laminae*. This Salt, whether sublimated or crystallized, has the Property of dissolving in Spirit of Wine; and if you set this Spirit of Wine on Fire, its Flame is green. Spirit of Wine has no Effect on *Borax*; the Oil of *Vitriol*, digested with Spirit of Wine, communicates no Greenness to its Flame: therefore it is requisite that the *Borax* should be united to an Acid, in order to produce this green Flame.

P O S T S C R I P T.

I Send you a Specimen of Salt made of *Crystals of Tartar* and Lime Water, which Mess^{rs}. *Grosse* and *Dubamel*, two Members of our Academy, have prepared; to which I join *Crystals of Seignette's Salt*, that M. *Bolduc* and I have made separately.

You will also find some *Sal Sedativum* made by Crystallization, which crystallizes in a peculiar Manner. This Operation is perform'd with ℥iv of *Borax*, and ℥i 3i of concentrated Oil of *Vitriol*, the most fixt and weighty that can be had. The *Borax* is put into a Glass Retort, the Oil of *Vitriol* is poured on it, and then half an Ounce of common Water. This Mixture being exposed to a Fire gradually encreased, after the Phlegm has passed off,
and

and even while it is passing, there rises Flowers, or a volatile Salt in very beautiful foliated *Lamine*; some of which melt by the Heat of the Fire. After the Operation, the finest of these Flowers, which are round the Neck of the Retort, are gathered; and those that are grey, are thrown upon the remaining Mass: which Mass is dissolved in Water, filtrated, and evaporated slowly. Sometimes, even without Evaporation, the shining Talcous *Lamine* are to be seen in the Liquor. In 24 Hours the Liquor is poured off these *Lamine*: they are washed in fair Water, set to drain, and then to dry in a Stove.

If these *Crytals* do not calcine in the Stove, or in the Sun, 'tis a Sign there is nothing crytallized but the *Sal neutrum*: if they do calcine, 'tis a Sign that there is some *Glauber's Salt* mixed. And then this Salt must be dissolved again in hot Water, and re-crytallized. No body before me has thought of extracting this Salt by Crytallization: It was always sublimed hitherto.